UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,167	03/04/2002	Mikael Berlin	027650.968	2969

21839 7590 01/12/2004

BURNS DOANE SWECKER & MATHIS L L P
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER	
MUSSER, BARBARA J	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 01/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/070,167	BERLIN ET AL.	
	Examiner	Art Unit	
	Barbara J. Musser	1733	

-- The MAILING DATE of this c mmunication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-18 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-18 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, it is unclear if the barrier layer formed by the barrier composition in line 5 is the same barrier layer as in line 2 or a different one.

Regarding claim 4, it is unclear what is meant by hydroxy 1 groups. For the purposes of examination, this is assumed to be hydroxyl groups.

Regarding claims 5 and 8, it is unclear if these are intended to be Markush groups. It is suggested applicant re-write them in proper Markush language.

Regarding claims 6 and 7, it is unclear if this barrier layer is the barrier layer of line 2 of claim 1, or a different one.

Regarding claims 9 and 10, it is unclear if applicant intended the claims to be closed or open as "substantially consists" does not have a set meaning. If applicant intended these claims to be closed, it is suggested that "substantially consists" be changed to --consisting essentially of--.

Regarding claim 11, it is unclear exactly what should be at a temperature of up to 200 C as applicant has not disclosed which surface is the "web surface". It is suggested this language be removed.

3. Claim 16 recites the limitation "the layer of plastic" in line 1. There is insufficient antecedent basis for this limitation in the claim. It is suggested this claim is intended to depend from claim 2.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-9 and 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bengtsson et al.(U.S. Publication 2001/0005550A1) hereafter referred to as Bengtsson et al. '550 and Wilkinson et al.(U.S. Patent 4,051,277).

Bengtsson et al. '550 discloses forming a laminated packaging material by coating an aqueous polymer dispersion on a carrier layer, drying it to form a barrier layer, and bonding the carrier and barrier layer to a paper core.(paragraph [0025]) The reference discloses a two stage drying process wherein the barrier layer is first dried at 80-160C, and then cured at 170-230C.(paragraph [0030]) While the reference does not specifically state the barrier layer is cured after application of the paper core, one in the art reading the reference as a whole would appreciate that the barrier layer can be applied to the paper core after it is dried(paragraphs [0045], claims 1 and 6) suggests that it can be cured after uniting particularly since Wilkinson et al. discloses applying a barrier layer, drying it, bonding a layer to it, and then curing the barrier layer at a higher

temperature than the drying temperature for materials that contact food items.(Col. 1, ll. 23-24, 33-46; Col. 3, ll. 31-35, 64- Col. 4, ll. 3; Col. 9, ll. 4; Col. 10, ll. 23) It would have been obvious to one of ordinary skill in the art at the time the invention was made to bond a layer to the dried barrier layer and then cure the barrier layer since Bengtsson et al. '550 suggests the dried barrier layer can be bonded to the core and since the reference suggests the dried layer can also be cured and since Wilkinson et al. discloses this process is known for materials that contact food items.(Col. 1, ll. 23-46)

Regarding claim 2, Bengtsson et al. '550 discloses extruding an adhesive layer to bond the gas barrier to the paper core.(paragraph [0039])

Regarding claim 3, the barrier layer is formed by coating the carrier.(paragraph [0026])

Regarding claims 4 and 5, the barrier layer can contain polyvinyl alcohol.(paragraph [0026])

Regarding claim 6, Bengtsson et al. '550 discloses the barrier layer can be dried at 80-160C.(paragraph [0030])

Regarding claim 7-9, Bengtsson et al. '550 discloses forming the barrier layer from a mixture of ethylene acrylic acid and polyvinyl alcohol to create a gas barrier that prevents transport of water through the barrier layer.(paragraph [0084])

Regarding claim 11, Bengtsson et al. '550 discloses the barrier layer can be cured at 170-210C.(paragraph [0030])

Regarding claim 12, the barrier layer is applied at a quantity of 1-10 g/m^2.(paragraph [0035])

Regarding claim 14, Bengtsson et al. '550 discloses the paper can have a weight of 15-35 g/m^2.(paragraph 0037])

Regarding claim 15, Bengtsson et al. '550 discloses applying thermoplastic layers to the outer surfaces of both the paper core and the barrier layer.(Figure 2)

Regarding claim 16, Bengtsson et al. '550 discloses the adhesive layer is a light barrier.(paragraph [0044])

Regarding claims 17 and 18, the formed laminate can be folded to form a packaging container.(claims 22 and 23)

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bengtsson et al. '550 and Wilkinson et al. as applied to claim 8 above, and further in view of Kotani et al.(EP0590263A2).

The references cited above do not disclose the barrier layer having an inorganic laminar material mixed therein. Kotani et al. discloses a gas barrier composition made of a polymer and an inorganic laminar materials.(Abstract) Gas barrier such as polyvinyl alcohol are still oxygen permeable and it is desired to reduce this permeability by adding inorganic laminar materials.(.(Pg. 2, ll. 25-28) It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the inorganic laminar material of Kotani et al. to the gas barrier composition since this would reduce the oxygen permeability of the layer even more.(Pg. 2, ll. 25-28)

7. Claims 1-9 and 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berlin et al.(WO98/09812) hereafter referred to as Berlin et al. '812 in view of

Bengtsson et al.(U.S. Publication 2001/0005550A1) hereafter referred to as Bengtsson et al. '550 and Wilkinson et al.(U.S. Patent 4,051,277).

Berlin et al. '812 discloses forming a laminated packaging material by coating an aqueous polymer dispersion on a carrier layer, drying it to form a barrier layer, and bonding the carrier and barrier layer to a paper core.(Abstract; Pg. 6, ll. 34- Pg. 7, ll. 3; Col. 9, ll. 1-8) The reference discloses drying the barrier layer(Pg. 9, 34-35) but does not disclose bonding the barrier layer to the paper core, and then curing the barrier layer at a higher temperature that the drying temperature. Bengtsson et al. '550 discloses a two stage drying process wherein the barrier layer is first dried at 80-160C, and then cured at 170-230C.(paragraph [0030]) It would have been obvious to one of ordinary skill in the art at the time the invention was made to perform a two stage drying process on the barrier layer since this results in an improved gas barrier.(paragraph [0030]) While the reference does not specifically state the barrier layer is cured after application of the paper core, one in the art reading the reference as a whole would appreciate that the barrier layer can be applied to the paper core after it is dried(paragraphs [0045], claims 1 and 6) suggests that it can be cured after uniting particularly since Wilkinson et al. discloses applying a barrier layer, drying it, bonding a layer to it, and then curing the barrier layer at a higher temperature than the drying temperature for materials that contact food items.(Col. 1, ll. 23-24, 33-46; Col. 3, ll. 31-35, 64- Col. 4, ll. 3; Col. 9, ll. 4; Col. 10, ll. 23) It would have been obvious to one of ordinary skill in the art at the time the invention was made to bond a layer to the dried barrier layer and then cure the barrier layer since Bengtsson et al. '550 suggests the dried barrier layer can be bonded

to the core and since the reference suggests the dried layer can also be cured and since Wilkinson et al. discloses this process is known for materials that contact food items.(Col. 1, ll. 23-46)

Regarding claim 2, Berlin et al. '812 discloses laminating the paper core to the carrier layer via an adhesive but does not disclose extruding the adhesive between the core and the carrier. Bengtsson et al. '550 discloses extruding an adhesive layer to bond the gas barrier to the paper core.(paragraph [0039]) It would have been obvious to one of ordinary skill in the art at the time the invention was made to extrude the adhesive layer to bond the paper core and barrier layer of Berlin et al. '812, Bengtsson et al., '550 and Wilkinson et al. since Berlin et al. '812 is silent as to the method of bonding and since Bengtsson et al. '550 shows that extruding an adhesive to bond together the same type materials as in Berlin et al. '812, namely a paper core and a barrier layer.(paragraph [0039])

Regarding claim 3, the barrier layer is formed by coating the carrier.(Berlin et al. '812, Pg. 9, ll. 1-8)

Regarding claims 4 and 5, the barrier layer can contain polyvinyl alcohol.(Berlin et al.'812, Pg. 9, ll. 32)

Regarding claim 6, Bengtsson et al. '550 discloses the barrier layer can be dried at 80-160C.(paragraph [0030])

Regarding claim 7-9, Bengtsson et al. '550 discloses forming the barrier layer from a mixture of ethylene acrylic acid and polyvinyl alcohol to create a gas barrier that prevents transport of water through the barrier layer.(paragraph [0084]) It would have

been obvious to one of ordinary skill in the art at the time the invention was made to mix the polyvinyl alcohol barrier layer with ethylene acrylic acid since Bengtsson et al discloses that mixing a polymer such as ethylene acrylic acid with polyvinyl alcohol creates a gas barrier that prevents transport of water through the barrier layer.(paragraph [0084])

Regarding claim 11, Bengtsson et al. '550 discloses the barrier layer can be cured at 170-210C.(paragraph [0030])

Regarding claim 12, the barrier layer is applied at a quantity of 1-10 g/m^2.(Berlin et al. '812, Pg. 9, ll. 34)

Regarding claim 13 and 14, while Berlin et al. '812 discloses the carrier layer is polylactide, the material is clearly exemplary, and only a material which acts as a liquid barrier is required. Bengtsson et al. '550 discloses a packaging material having both a paper core and a paper layer which can be joined using PVA.(Abstract) It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the polylactide layer of Berlin et al. '812 with a paper layer since it is a well-known alternative to a plastic layer in the package making arts.(Abstract)

Regarding claim 14, Bengtsson et al. '550 discloses the paper can have a weight of 15-35 g/m^2.(paragraph 0037])

Regarding claim 15, Bengtsson et al. '550 discloses applying thermoplastic layers to the outer surfaces of both the paper core and the barrier layer.(Figure 2) It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply thermoplastic layers to the outer surfaces of both the paper core and the

barrier layer to protect them as shown for example by Bengtsson et al. '550 and since this would allow them to be heat sealable.

Regarding claim 16, Bengtsson et al. discloses the adhesive layer is a light barrier.(paragraph [0044])

Regarding claims 17 and 18, the formed laminate can be folded to form a packaging container.(Berlin et al. '812, Pg. 2, ll. 5-9)

8. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Berlin et al. '812, Bengtsson et al. '550, and Wilkinson et al. as applied to claim 8 above, and further in view of Kotani et al.(EP0590263A2).

The references cited above do not disclose the barrier layer having an inorganic laminar material mixed therein. Kotani et al. discloses a gas barrier composition made of a polymer and an inorganic laminar materials.(Abstract) Gas barrier such as polyvinyl alcohol are still oxygen permeable and it is desired to reduce this permeability by adding inorganic laminar materials.(.(Pg. 2, ll. 25-28) It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the inorganic laminar material of Kotani et al. to the gas barrier composition of Berlin et al. '812, Bengtsson et al. '550, and Wilkinson et al. since this would reduce the oxygen permeability of the layer even more.(Pg. 2, ll. 25-28)

9. Claims 1-9 and 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berlin et al.(WO98/09812) hereafter referred to as Berlin et al. '812 in view of Bengtsson et al.(WO 99/46121) hereafter referred to as Bengtsson et al. '121 and Wilkinson et al.

Berlin et al. '812 discloses forming a laminated packaging material by coating an aqueous polymer dispersion on a carrier layer, drying it to form a barrier layer, and bonding the carrier and barrier layer to a paper core.(Abstract; Pg. 6, ll. 34- Pg. 7, ll. 3; Col. 9, ll. 1-8) The reference discloses drying the barrier layer(Pg. 9, 34-35) but does not disclose bonding the barrier layer to the paper core, and then curing the barrier layer at a higher temperature that the drying temperature. Bengtsson et al. '121 discloses a two stage drying process wherein the barrier layer is first dried at 80-160C, and then cured at 170-230C.(Pg. 7, ll. 11-15) It would have been obvious to one of ordinary skill in the art at the time the invention was made to perform a two stage drying process on the barrier layer since this results in an improved gas barrier.(Pg. 7, ll. 11-15) While the reference does not specifically state the barrier layer is cured after it is bonded to another layer, one in the art reading the reference as a whole would appreciate since that another layer can be applied to the barrier layer after the barrier layer is dried(Pg. 17, ll. 14), this suggests that it can be cured after uniting particularly since Wilkinson et al. discloses applying a barrier layer, drying it, bonding a layer to it, and then curing the barrier layer at a higher temperature than the drying temperature for materials that contact food items.(Col. 1, ll. 23-24, 33-46; Col. 3, ll. 31-35, 64- Col. 4, ll. 3; Col. 9, ll. 4; Col. 10, ll. 23) It would have been obvious to one of ordinary skill in the art at the time the invention was made to bond a layer to the dried barrier layer and then cure the barrier layer since Bengtsson et al. '121 suggests the dried barrier layer can be bonded to the core and since the reference suggests the dried layer can also be cured and

since Wilkinson et al. discloses this process is known for materials that contact food items.(Col. 1, ll. 23-46)

Regarding claim 2, Berlin et al. '812 discloses laminating the paper core to the carrier layer via an adhesive but does not disclose extruding the adhesive between the core and the carrier. Bengtsson et al. '121 discloses extruding an adhesive layer to bond the gas barrier to the paper core.(Pg. 17, ll. 15-19) It would have been obvious to one of ordinary skill in the art at the time the invention was made to extrude the adhesive layer to bond the paper core and barrier layer of Berlin et al. '812, Bengtsson et al. '121, and Wilkinson et al. since Berlin et al. '812 is silent as to the method of bonding and since Bengtsson et al. '121 shows that extruding an adhesive to bond together the same type materials as in Berlin et al. '812, namely a paper core and a barrier layer.

Regarding claim 3, the barrier layer is formed by coating the carrier.(Berlin et al. '812, Pg. 9, ll. 1-8)

Regarding claims 4 and 5, the barrier layer can contain polyvinyl alcohol.(Berlin et al. '812, Pg. 9, ll. 32)

Regarding claim 6, Bengtsson et al. '121 discloses the barrier layer can be dried at 80-160C.(Pg. 7, ll. 12)

Regarding claim 7-9, Bengtsson et al. '121 discloses forming the barrier layer from a mixture of ethylene acrylic acid and polyvinyl alcohol to create a gas barrier that prevents transport of water through the barrier layer.(Pg. 16, ll. 11-21) It would have been obvious to one of ordinary skill in the art at the time the invention was made to mix

the polyvinyl alcohol barrier layer with ethylene acrylic acid since Bengtsson et al '121 discloses that mixing a polymer such as ethylene acrylic acid with polyvinyl alcohol creates a gas barrier that prevents transport of water through the barrier layer.(Pg. 16, ll. 11-21)

Regarding claim 11, Bengtsson et al. '121 discloses the barrier layer can be cured at 170-210C.(Pg. 7, ll. 14)

Regarding claim 12, the barrier layer is applied at a quantity of 1-10 g/m^2.(Berlin et al. '812, Pg. 9, ll. 34)

Regarding claim 13 and 14, while Berlin et al. '812 discloses the carrier layer is polylactide, the material is clearly exemplary, and only a material which acts as a liquid barrier is required. Bengtsson et al. '121 discloses a packaging material having both a paper core and a paper layer which can be joined using PVA.(Abstract) It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the polylactide layer of Berlin et al. '812 with a paper layer since it is a well-known alternative to a plastic layer in the package making arts.(Abstract)

Regarding claim 14, Bengtsson et al. '121 discloses the paper can have a weight of 15-35 g/m^2.(Pg. 8, ll. 2)

Regarding claim 15, Bengtsson et al. '121 discloses applying thermoplastic layers to the outer surfaces of both the paper core and the barrier layer.(Figure 2; Pg. 17, ll. 22-25) It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply thermoplastic layers to the outer surfaces of both the

paper core and the barrier layer to protect them as shown for example by Bengtsson et al. '121.

Regarding claim 16, as the adhesive layer between the paper and core of Berlin et al. '812 and Bengtsson et al. '121 is the same as applicant's, it would have the capabilities, namely functioning as a light barrier.

Regarding claims 17 and 18, the formed laminate can be folded to form a packaging container.(Berlin et al. '812, Pg. 2, ll. 5-9)

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Berlin et al. '812 in view of Bengtsson et al. '121 and Wilkinson et al. as applied to claim 8 above, and further in view of Kotani et al.(EP0590263A2).

The references cited above do not disclose the barrier layer having an inorganic laminar material mixed therein. Kotani et al. discloses a gas barrier composition made of a polymer and an inorganic laminar materials.(Abstract) Gas barrier such as polyvinyl alcohol are still oxygen permeable and it is desired to reduce this permeability by adding inorganic laminar materials.(.(Pg. 2, ll. 25-28) It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the inorganic laminar material of Kotani et al. to the gas barrier composition since this would reduce the oxygen permeability of the layer even more.(Pg. 2, ll. 25-28)

11. Claims 1-9 and 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berlin et al. (WO98/09812) hereafter referred to as Berlin et al. '812 in view of Berlin et al.(WO 97/22536) hereafter referred to as Berlin et al.'536, and Wilkinson et al.

Berlin et al. '812 discloses forming a laminated packaging material by coating an aqueous polymer dispersion on a carrier layer, drying it to form a barrier layer, and bonding the carrier and barrier layer to a paper core.(Abstract; Pg. 6, ll. 34- Pg. 7, ll. 3; Col. 9, ll. 1-8) The reference discloses drying the barrier layer(Pg. 9, 34-35) but does not disclose bonding the barrier layer to the paper core, and then curing the barrier layer at a higher temperature that the drying temperature. Berlin et al. '536 discloses a two stage drying process wherein the barrier layer is first dried at 80-160C, and then cured at 170-230C.(Pg. 12, ll. 9-15) It would have been obvious to one of ordinary skill in the art at the time the invention was made to perform a two stage drying process on the barrier layer since this results in an improved gas barrier.(Pg. 12, ll. 9-15) While the reference does not specifically state the barrier layer is cured after application of the paper core, one in the art reading the reference as a whole would appreciate that the barrier layer can be applied to the paper core after it is dried(Pg. 13, ll. 27), suggesting that it can be cured after uniting particularly since Wilkinson et al. discloses applying a barrier layer, drying it, bonding a layer to it, and then curing the barrier layer at a higher temperature than the drying temperature for materials that contact food items.(Col. 1, ll. 23-24, 33-46; Col. 3, ll. 31-35, 64- Col. 4, ll. 3; Col. 9, ll. 4; Col. 10, ll. 23) It would have been obvious to one of ordinary skill in the art at the time the invention was made to bond a layer to the dried barrier layer and then cure the barrier layer since Bengtsson et al. suggests the dried barrier layer can be bonded to the core and since the reference suggests the dried layer can also be cured and since Wilkinson et al. discloses this process is known for materials that contact food items.(Col. 1, ll. 23-46)

Regarding claim 2, Berlin et al. '812 discloses laminating the paper core to the carrier layer via an adhesive but does not disclose extruding the adhesive between the core and the carrier. Berlin et al. '536 discloses extruding an adhesive layer to bond the gas barrier to the paper core.(Pg. 10, ll. 13-17) It would have been obvious to one of ordinary skill in the art at the time the invention was made to extrude the adhesive layer to bond the paper core and barrier layer since Berlin et al. '812 is silent as to the method of bonding and since Berlin et al. '536 shows that extruding an adhesive to bond together the same type materials as in Berlin et al. '812, namely a paper core and a barrier layer.

Regarding claim 3, the barrier layer is formed by coating the carrier.(Berlin et al. '812, Pg. 9, ll. 1-8)

Regarding claims 4 and 5, the barrier layer can contain polyvinyl alcohol.(Berlin et al. '812, Pg. 9, ll. 32)

Regarding claim 6, Berlin et al. '536 discloses the barrier layer can be dried at 100.(Pg. 12, ll. 10)

Regarding claims 7-9, Berlin et al. '536 discloses mixing ethylene acrylic acid with polyvinyl alcohol to create a gas barrier.(Pg. 5, ll. 10-1; Pg. 7, ll. 1-2)

Regarding claim 11, Berlin et al. '536 discloses the barrier layer can be cured at 170C.(Pg. 12, ll. 11)

Regarding claim 12, the barrier layer is applied at a quantity of 1-10 g/m^2.(Berlin et al. '812, Pg. 9, ll. 34)

Regarding claim 13 and 14, while Berlin et al. '812 discloses the carrier layer is polylactide, the material is clearly exemplary, and only a material which acts as a liquid barrier is required. Berlin et al. '536 discloses a packaging material having both a paper core and a paper layer which can be joined using PVA.(Abstract) It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the polylactide layer of Berlin et al. '812 with a paper layer since it is a well-known alternative to a plastic layer in the package making arts.(Abstract)

Regarding claim 14, since the references are intended to make the same types of products as applicant, one in the art would appreciate that the paper used would have the same weight range as applicant.

Regarding claim 15, Berlin et al. '536 discloses applying thermoplastic layers to the outer surfaces of both the paper core and the barrier layer.(Figure 2; Pg. 9, ll. 27-30) It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply thermoplastic layers to the outer surfaces of both the paper core and the barrier layer to protect them and since this would allow heat sealing as shown for example by Berlin et al. '536.(Pg. 9, ll. 35)

Regarding claim 16, as the adhesive layer between the paper and core of Berlin et al., Berlin et al. '536, and Wilkinson et al. is the same as applicant's, it would have the capabilities, namely functioning as a light barrier.

Regarding claims 17 and 18, the formed laminate can be folded to form a packaging container.(Berlin et al. '812, Pg. 2, ll. 5-9)

12. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Berlin et al. '812, Berlin et al. '536, and Wilkinson et al. as applied to claim 8 above, and further in view of Kotani et al.(EP0590263A2).

The references cited above do not disclose the barrier layer having an inorganic laminar material mixed therein. Kotani et al. discloses a gas barrier composition made of a polymer and an inorganic laminar materials.(Abstract) Gas barrier such as polyvinyl alcohol are still oxygen permeable and it is desired to reduce this permeability by adding inorganic laminar materials.(.(Pg. 2, ll. 25-28) It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the inorganic laminar material of Kotani et al. to the gas barrier composition since this would reduce the oxygen permeability of the layer even more.(Pg. 2, ll. 25-28)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Barbara J. Musser** whose telephone number is **(571) 272-1222**. The examiner can normally be reached on Monday-Thursday; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 703-308-3853. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

BJM

JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300